

## IN SITU CATALYST REGENERATION ACTIVATION PROCESS

## ABSTRACT OF THE DISCLOSURE

5 An *in situ* process for conducting regeneration of spent hydrocarbon synthesis catalyst. Regenerated, but not yet re-activated, catalyst (15) may be introduced into an operating HCS reactor (1) that has catalyst rejuvenation means (14). Any combination of a fresh, activated catalyst, a fresh, passivated catalyst or short-term or long-term deactivated catalysts may already be present in the HCS reactor (1). The regenerated, but not yet re-activated catalyst is activated in the HCS reactor (1) with rejuvenation means (14) at normal process conditions. The HCS reactor (1) receives syngas through the inlet line (3) and releases liquid hydrocarbons through outlet line (4) and gaseous hydrocarbon and unreacted syngas through the offgas line (2). Catalyst is removed from the HCS reactor (1) through the slipstream line (5) and into a filtration unit (6) which is fed with a stripping fluid (7). The filtered catalyst proceeds to the regeneration unit (9) which is fed a regenerative fluid (10). The regenerated catalyst is returned to the HCS Reactor (1) through the catalyst return line (11) where it is reactivated.